

Novell® Open Enterprise Server

vs. Microsoft* Windows* Server 2003:

A Total Cost of Ownership Study for NetWare® Customers

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Overview



In March 2005, Novell shipped the first release of Novell® Open Enterprise Server, which delivers industry-leading Novell workgroup platform services to customers on their choice of kernels—NetWare® or SUSE™ Linux. Novell NetWare customers are now determining whether they should upgrade to Open Enterprise Server or migrate to an alternative platform such as Microsoft* Windows* Server 2003.

While Novell is known for delivering superior functionality over Microsoft, many customers are trying to determine which product will deliver a better return on investment, and which solution will be the most cost-effective use of their limited IT budget dollars.

To aid in this decision, Novell conducted this study to determine the total cost of ownership for a NetWare customer choosing between Novell Open Enterprise Server and Microsoft Windows. The results of this study clearly indicate that Open Enterprise Server is a much more cost-effective solution than Windows Server 2003.

The following table outlines three typical IT environments where NetWare is currently deployed today and how much it would cost to move to Open Enterprise Server and Windows Server 2003:

Table 1. Total Migration and Operational Costs (three years)¹

	MIGRATION COSTS		OPERATIONAL COSTS ²		TOTAL SAVINGS WITH NOVELL OPEN ENTERPRISE SERVER ³
	WINDOWS SERVER 2003	NOVELL OPEN ENTERPRISE SERVER	WINDOWS SERVER 2003	NOVELL OPEN ENTERPRISE SERVER	
1,000 users and 70 servers	\$300,000	\$2,000	\$899,769	\$601,179	\$596,590
3,500 users and 100 servers	\$560,000	\$7,000	\$3,001,151	\$1,991,221	\$1,562,930
6,000 users and 140 servers	\$960,000	\$12,000	\$4,833,257	\$2,369,624	\$3,411,633

Source: Novell, July 2005

The results of this research study show that it costs on average about \$189 per user⁴ to migrate from NetWare to Windows Server 2003.⁵ On the other hand, the costs of upgrading from NetWare to Open Enterprise Server are virtually negligible.

Migrating to Open Enterprise Server could translate into a \$600,000 to \$3.5 million dollar savings for companies.

Open Enterprise Server offers enormous savings over Windows Server 2003 with respect to

¹ The costs are based on installations with no remote sites.

² The operational costs in Table 1 are computed from the totals in Tables 3, 4 and 5 below. For example, the operational cost for Windows Server 2003 for the 3,500-user and 100-server environment is computed by taking the one-time cost total (from Table 4) for Windows Server 2003 (\$1,782,380) and adding it to three times the total annual cost (three times \$406,257) to get \$3,001,151.

³ The Total Savings with Open Enterprise Server for each row in Table 1 is computed by adding together the Open Enterprise Server migration cost and operational cost advantages. For example, an Open Enterprise Server savings of \$3,411,633 for the 6,000-user and 140-server environment is computed as follows: (\$960,000 - \$12,000) + (\$4,833,257 - \$2,369,624).

⁴ This compares to a \$430 cost per user that was calculated in 1999 for migrating from NetWare 4 to Windows 2000 Server. www.computerworld.com/softwaretopics/os/windows/story/0,10801,52669,00.html

⁵ A table in a later section of this paper provides guidelines (based on the number of users) for computing NetWare to Windows Server 2003 migration costs.

operational costs—even though this study assumed the same hardware and the same number of system administrators in both environments.

In addition, one could argue the savings achieved with Open Enterprise Server are actually *underestimated*, because this study did not include the loss of business due to security vulnerabilities, which are far more prevalent on the Windows platform than on Open Enterprise Server. Finally, Windows environments typically have higher hardware requirements and require more system administrators than Open Enterprise Server.

WHY CONDUCT A COST OF OWNERSHIP STUDY?

In March 2005, Novell shipped Novell Open Enterprise Server as the next generation workgroup solution for NetWare customers. Open Enterprise Server permits users to install a comprehensive set of Novell services, such as iPrint, Novell eDirectory[®], ZENworks[®], etc., on either NetWare 6.5.3 or SUSE Linux Enterprise Server 9. Open Enterprise Server on NetWare 6.5 (written Open Enterprise Server/NetWare 6.5) is appropriate for those Novell users that want to stay aligned with NetWare but also want an upgrade. For NetWare users that want to move to Linux^{*}, Open Enterprise Server/SUSE Linux Enterprise Server 9 is recommended.

Microsoft has been targeting NetWare users for migration to Windows Server 2003 for the past few years. Novell customers do not always know what to do—stay with NetWare and upgrade or migrate to Windows Server 2003. The decision often revolves around cost—is it more cost effective to stay with NetWare or migrate to Windows Server 2003? It is a

difficult decision to make because users generally do not know how much it costs to do a migration or upgrade and then what the ongoing operational costs⁶ are afterwards.

In June, 2005, Novell conducted a study involving companies that have upgraded from NetWare to Open Enterprise Server and companies that have installed NetWare and subsequently migrated to Windows Server 2003. The results proved that Open Enterprise Server is far more cost effective than Windows Server 2003.

METHODOLOGY

To calculate total cost of ownership, this study looked at two areas—migration costs and on-going operational costs. Novell Open Enterprise Server came out a winner in both areas.

Typical Starting NetWare Environment

For the purposes of this study, the authors identified a “typical NetWare environment” and then used this environment as a starting point for migrating to Open Enterprise Server or Windows Server 2003, with equivalent functionality.

The starting environment consisted of:

- Windows client workstations and NetWare servers
- Windows 2000 and Windows XP along with Novell Client software⁷
- An e-mail client (Novell GroupWise[®] client, Microsoft Outlook^{*} or Lotus Notes^{*})
- Microsoft Office
- A Web browser
- Custom applications, depending on the organization

⁶Operational costs are one-time licensing costs plus annual maintenance costs.

⁷Novell Client software allows Windows workstations to access and use all of the services/utilities running on NetWare. Typically, users accessing custom applications would be authenticated via Novell eDirectory.

In addition, the starting environment consisted of the following software running on NetWare servers:

- NetWare core software—Novell eDirectory, iPrint, file & print, etc.
- Virus-scan software such as McAfee*
- Backup/restore software such as ARCserve
- Management software such as ZENworks
- GroupWise (if Novell e-mail is being used)

Most, if not all, of the Novell services software depends on Novell eDirectory. The NetWare servers are Intel-based with most of them one and two CPUs and a few with four CPUs. LANs and WANs may also be present in a NetWare environment, and they can further complicate a migration to Windows Server 2003.

Migration Costs

To determine the migration costs, the authors interviewed IT administrators and consultants at multiple organizations including several people who have been involved in migrations from NetWare to Windows Server 2003 and in upgrades from NetWare to Open Enterprise Server. The number of users at these organizations varied from 2,000 to 45,000 and the number of NetWare servers varied from 70 to as many as 600. The period of time over which migrations took place varied from one year to three years. The following data was captured:

- Profiles of typical migrated NetWare environments
- Number of users (clients/workstations) migrated
- Number of servers migrated
- Number of people and the amount of time that they worked on a migration

- Areas of difficulty in migrations

Using this data, the best comparison metric for this study was determined to be *cost per user*. This metric was chosen because it directly encapsulates most of the costs, and migrating users is the most difficult and time consuming activity in a migration.

The migration costs for NetWare to Windows Server 2003 are largely a function of directory conversion—from Novell eDirectory to Windows Server 2003 Active Directory* (AD). Moving user files and file permissions from Novell eDirectory to Windows Server 2003 Active Directory is a big challenge. Because both NetWare and Open Enterprise Server use Novell eDirectory, there are no difficulties in moving from NetWare to Open Enterprise Server, so obviously the costs are lower.

To determine the cost per user, the following formula was applied: the number of person-years spent working on each migration multiplied by an average yearly salary of \$80,000. The cost per user for a migration was determined by dividing the cost of the migration by the number of users migrated. The cost and time for travel, training, etc., are included in the migration costs, but e-mail migration is not included.

Cost per User:

NetWare to Open Enterprise Server

Moving from NetWare to Open Enterprise Server is an upgrade—not a migration—because the same Novell services are available with Open Enterprise Server as with NetWare. There are no directory migrations required. Customers report that it takes about a week to upgrade an installation

from NetWare to Open Enterprise Server/NetWare and approximately two weeks to upgrade from NetWare to Open Enterprise Server/SUSE Linux Enterprise Server.

The gating factor for upgrading to Open Enterprise Server/SUSE Linux Enterprise Server is the degree of Linux experience available. The cost of upgrading from a NetWare environment to Open Enterprise Server is about \$2 per user for Open Enterprise Server/NetWare and about \$4 per user for Open Enterprise Server/SUSE Linux Enterprise Server. These costs are negligible when compared to the cost of migrating to Windows Server 2003.

Cost per User: NetWare to Windows Server 2003

The primary cost of a NetWare to Windows Server 2003 migration is associated with migration from Novell eDirectory to Microsoft Active Directory.

The guidelines for migration costs are as follows:

- Small number of users (in the 100 to 3,000 range)—\$300 per user
- Medium number of users (in the 3,001 to 10,000 range)—\$160 per user
- Large number of users (in the 40,000 and up range)—\$107 per user

The overall average cost per user is about \$189. But the cost of migrating from NetWare to Windows Server 2003 can be more if the NetWare environment has a relatively large number of remote sites that require considerable travel and testing at the sites. Our survey indicated that on the average, the cost per user could jump by more than \$100 for remote sites. At each site, the migration staff had to ensure that user passwords and files

were migrated properly via testing. This required staff to stay on site longer than it did for upgrades from NetWare to Open Enterprise Server, where site travel was generally required only if there was a technical problem.

Ongoing Operational Costs

The three-year ongoing operational costs for Novell Open Enterprise Server and Windows Server 2003 were calculated using the Novell Cost of Ownership calculator. The calculator is a tool that computes one-time and annual operational costs based on a database of maintenance, labor, licensing and pricing costs. All of the pricing data in the calculator database were derived from the Microsoft and Novell Web sites and represent non-discounted pricing.

This study used Microsoft Server 2003 Enterprise Edition as the basis for Windows operating system costs. The study assumed that NetWare users upgrading to Open Enterprise Server were paying annual per user upgrade protection costs, so there is no additional fee to upgrade to Open Enterprise Server.

Licensing is a key differentiator for Microsoft and Novell. Both companies charge a one-time license fee and an annual maintenance fee.

But Novell charges only a per-user fee for Open Enterprise Server maintenance, while Microsoft charges both a per-user fee and a per-server fee.

When users buy Open Enterprise Server, they get a box with both NetWare 6.5 and SUSE Linux Enterprise Server 9 software along with a comprehensive set of Novell services. The user is allowed to install the services on either NetWare 6.5 or SUSE Linux Enterprise Server 9.

Ongoing operational costs include:

- Cost of hardware
- Cost of operating systems
- Cost of middleware
- Cost of hardware maintenance
- Cost of operating system maintenance
- Cost of middleware maintenance
- Loss of business due to downtime

With the exception of loss of business due to downtime, all of the above costs are included in the ongoing operational cost calculations.

The operational costs were computed as the sum of one-time costs plus annual costs for a three-year period, assuming the same hardware would be used to run Windows Server 2003 and Open Enterprise Server. The study also assumes the number of systems administrators would be the same for both environments and the same types of applications would be run. The following table outlines the functionality covered by this study. Note that every effort was made to deliver equivalent functionality between the two operating systems.

Table 2. Software Used in Ongoing Operational Cost Calculations

APPLICATION TYPE	OPEN ENTERPRISE SERVER	WINDOWS SERVER 2003
Web server	Apache	Microsoft IIS
Application server	IBM* WebSphere* Application Server	IBM WebSphere Application Server
Database	Oracle*	Microsoft SQL Server*
Authentication	Novell eDirectory	Microsoft Active Directory
E-mail	Novell GroupWise	Microsoft Exchange Server

Source: Novell, July 2005

DETAILED ANALYSIS OF OPERATIONAL COSTS

The following tables indicate the ongoing operational costs for three typical computing environments. The one-time cost is the cost of licenses and the annual cost is the operational cost (maintenance). The Novell Open Enterprise Server Savings is computed by adding the one-time and annual costs for Windows Server 2003 and then subtracting the sum of the one-time and annual costs for Novell Open Enterprise Server.

The data from these tables is used in Table 1 in the "Operational Costs" section.

Table 3. Environment with 1,000 Users and 30 Servers

NUMBER/ TYPE OF SERVER	ONE-TIME COSTS		ANNUAL COSTS		SAVINGS WITH NOVELL OPEN ENTERPRISE SERVER
	WINDOWS SERVER 2003	NOVELL OPEN ENTERPRISE SERVER	WINDOWS SERVER 2003	NOVELL OPEN ENTERPRISE SERVER	
1 Mail	\$118,390	\$75,392	\$29,199	\$33,949	\$38,248
6 Web	\$143,111	\$87,117	\$31,895	\$16,396	\$71,493
3 Database	\$90,365	\$38,658	\$21,519	\$7,123	\$66,103
20 File & Print	\$183,127	\$85,147	\$38,982	\$47,487	\$89,475
Totals	\$534,993	\$286,314	\$121,595	\$104,955	\$265,319

Source: Novell, July 2005

Table 4. Environment with 3,500 Users and 100 Servers

NUMBER/ TYPE OF SERVER	ONE-TIME COSTS		ANNUAL COSTS		SAVINGS WITH NOVELL OPEN ENTERPRISE SERVER
	WINDOWS SERVER 2003	NOVELL OPEN ENTERPRISE SERVER	WINDOWS SERVER 2003	NOVELL OPEN ENTERPRISE SERVER	
4 Mail	\$419,319	\$265,327	\$103,420	\$119,047	\$138,365
18 Web	\$448,839	\$261,857	\$100,684	\$49,438	\$238,228
8 Database	\$273,895	\$104,343	\$65,717	\$19,411	\$215,858
70 File & Print	\$640,327	\$297,397	\$136,436	\$166,203	\$313,163
Totals	\$1,782,380	\$928,924	\$406,257	\$354,099	\$905,614

Source: Novell, July 2005

Table 5. Environment with 6,000 Users and 140 Servers

NUMBER/ TYPE OF SERVER	ONE-TIME COSTS		ANNUAL COSTS		SAVINGS WITH NOVELL OPEN ENTERPRISE SERVER
	WINDOWS SERVER 2003	NOVELL OPEN ENTERPRISE SERVER	WINDOWS SERVER 2003	NOVELL OPEN ENTERPRISE SERVER	
6 Mail	\$709,105	\$451,117	\$197,193	\$203,696	\$251,485
32 Web	\$788,855	\$464,887	\$176,771	\$87,779	\$412,960
12 Database	\$440,719	\$157,891	\$106,075	\$29,491	\$359,412
90 File & Print	\$883,207	\$385,297	\$190,418	\$271,440	\$416,888
Totals	\$2,821,886	\$1,459,192	\$670,457	\$592,406	\$1,440,745

Source: Novell, July 2005

CONCLUSION

The case is clear: for a NetWare customer, Novell Open Enterprise Server is significantly less expensive than Windows Server 2003. Depending on the number of users, a NetWare customer saves between \$600,000 and \$3.5 million by choosing Novell Open Enterprise Server.

In addition, a migration from NetWare to Open Enterprise Server not only saves users time and money, but also eliminates the turmoil and disruption of business during the migration. Novell Open Enterprise Server provides all of the services that an information worker needs to do his or her job effectively and efficiently. Finally, by choosing Novell, customers avoid new hardware purchases required to support Windows Vista⁸ and Windows Longhorn Server in the next two or three years.

⁸ Windows Vista is the new Microsoft name for Windows Longhorn client operating system.

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